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ABSTRACT

A new model was created for Spanish universities when the Parliament approved the Ley de Reforma Universitaria. It emphasizes that the university must serve the society and must cooperate in the solution of problems that affect the society. The universities are charged with the mission of executing the scientific policy of the nation and of the Comunidades Autonomas to which they belong. The new model has consequences for such factors as research, technological innovation, and professional preparation. Great flexibility and continual contact with the social reality are required to enable universities to adapt to a world in constant change. The model Spanish university would be financially autonomous, imaginative and creative, having adequate salaries for faculty, transnational, cooperating with developed and developing countries, and above all serving its society by adapting its studies to meet the needs of the country's enterprises and industries and the employment needs of its graduates. (JDD)

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The mission of the university in science and technology : discovery and application of universal knowledge within diverse social and economic systems

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"THE MISSION OF THE UNIVERSITY IN SCIENCE AND TECHNOLOGY: THE ROLE OF THE ENGINEERING STUDIES IN SPAIN AND MODEL OF UNIVERSITIES"

Nowadays, the Spanish University in general and the Polytechnic Universities in particular, are inmersed in a process of change as a response to the crisis that, along the last decades, had led the University to a stagnation of its structures. This deep change of its structures means that the University has not lost its pulse but that it is alive, and tries to move at the same time than the contemporary society.

In August, 1983, the Parlament approved the Ley de Reforma Universitaria, breaking models of the past and opening a way of reform.

The Ley de Reforma Universitaria is vertebrated, as its preamble indicates, basing on the idea that the University is not an exclusive heritage of the university community, but that constitutes an authentic public service, concerning to the general interests of the national community.

That is why the University must serve the society, which pais for it, and make it possible, what the society has the right to demand from it: the quality of the education, the quality of the research and the scientists, specialists and technicians preparation that the needs of the country demad.

The Ley de Refoma Universitaria has changed all the structures of the University, which were in force for some decades, in a substancial way.

The Ley de Refoma Universitaria gives the University enough liberty to reform itself into the frame that the Law establishes, and the Central Administration has transferred its power, distributing it among the Comunidades Autonomas, the Council of Universities, the Social Council and even the University through, in this last case, its Organos Colegiados y Unipersonales.

The new university model breaks old schemes. From an optional University to a departmental University. From an homogeneous University to a diversified and competitive University. From a centralized University system to a descentralized system. The unities of Catedra, Facultad and/or Escuela disappear. The homogeneity of the titles also dissapears. It is enhanced the creation of Departments with scientific coherence, although they may be utopian for the moment. Above all, the model of university of the Thirties disappears, which rejected Research and Technique, when the society realizes its needs from its Universities.

During the last years, the Universities have been inmersed in problems when developing the Ley de Reforma Universitaria. Different statutes have been elaborated for each university, that have been approved by the Government or by the Comunidades Autonomas according with all the institutions.

The most relevant effects of this new liberty, of this new autonomy, have been stated in the last stages, owing to the reason that the concept of university autonomy acquires importance as liberty to organize the educational labour and research, never forgetting that the Universities are public institutions of research that must cooperate in the solution of the problems that affect the society and, specially, the technical innovation.

Thus, they are institutions with the mission of executing the scientific policy of the nation and of the Comunidades Autonomas, to which they belong; that suggests, as first step, the definition of that scientific politic, through the Law of Science, as it is commonly called.

Science and Technique in general, the creative University, are most important for a country that wants to make

something in this world; it is the best way to get prestige.

But all of them are forced to adapt theirselves to the Society that evolves much more slowly than the Science.

That is the main challenge that the University reform must be able to assume: adapt the University, and the techniques above all, to the real world.

One of the definitive steps in our legislation has been the recognition by the Law of the relations Enterprise-University; We need to be ready for the challenge. And, consequently, we must learnt from more extensive experiences.

Few people doubt that researching and educational potential needs to relate with the productive system, and with the Society in general, to impulse the technological development, and through it, the economic and social development.

It is also a fact that in all industrialized countries, and mainly in the USA and Europe, have always existed, have been fomented and have increased the relations in R & D between

the educational and managerial worlds tending towards integrated systems Science-Technology-Industry-Society.

Changes and reforms in the University not only are taking place in our country. The European University has also had changes in the last years.

Another common aspect, in European and Northamerican universities, has been the enormous growth of the courses of specialization or postgraduate or master, which are being imparted in most of the universities of the world.

It is easy to understand the reason of this growth. The development of Science and Tecniques is constant, and that way the acquired knowledges in the university can be updated some years after the graduation.

This is still more obvious in some cases of High Technologies as Electronics, Computers, Communications, Energy and others.

It is absolutly necessary to offer to our old students the training complements that the technological advance involves.

On the other hand, in this areas of knowledge and, above all, in some technologies, the number of graduate students that a university can formed, in the next ten years, is crearly lower than what our industry and society need.

That is why it is necesary to develop a university policy of training "horizontal" and "vertical", preparing graduate students from other areas of knowledge, in both, long cicle studies and short studies, but with a scientific training in basic subjects, so that they can attend, in a short term, the needs of the society.

This new model of University, that lets develop the Ley de Reforma Universitaria, has, inevitably, practical consecuences, on the objects and problems with which the University will have to face in the future, in subjects of indubitable importance for the society, as those that refer to employment, specially the firs job, to research, to the technological innovation, to the professional preparation and so on.

On the other hand, the progress from the Industrial Age to the Scientific Age that place us in the way to the

postindustrial science, will require an adaptation capacity of the University to a world in constant change.

This can only be possible with a great flexibility and a continual contact with the social reality, since the sciences and tecniques progress and evolve much more rapidly than the structures and social values.

Such a connection with the social reality, appears like that, related to any of the circumstances that we may consider as typical of a present society, which is an open and pluralist society, industrial and thematic, as an imposed need for those same circumstances, in such a way that we could even say that the first condition that the education must carry out in the future to serve adequately to this cocrete society of us, will be to open itself to this society, setting a continual information network about its needs, and trying to respond to its complicated problems.

I would like to finish this conference, thinking about those new times towards the Universities are directing ourselves, to how and when to get that autonomy and open liberty to which we always aspire.

I insist that the Ley de Reforma Universitaria is a gate that must be crossed by the Universities in order to be able to reform and to orient theirselves towards its future. The model of heterogeneous, will make that some Universities advance and grow rapidly, and other stay stagnated in the past.

But, it is true, that only universities can get a complete autonomy, when they get an authentic financial autonomy.

I wish to communicate my optimism about the future of the Spanish Universities and specially in the engineering studies, in the coming times, to wich we are aheading ourselves.

The model of Spanish University of the year 2.000 is an imaginative and creative University; University of a high educational and researching quality, with a strong managerial character in its administration; totally autonomous and responsible.

A University that must be able to choose his pupils and well supplied economically and with administrative staff. A University where its faculty receives competitive

retributions comparing with the industrials sectors and, above all, have a similar social consideration comparing to other more advanced countries.

A transnational University, without frontiers, with authentic movility of its faculty and its students, in order to acquire more knowledges one from each other.

A University open to the relations with the developed countries: European Community, United States and Japan, and also helping the Third World Countries, that need our help and with which we are bounded by a strong affective and historical link.

But, above all, the very best model is the one that is preocupied for its society, for the adaptation of its studies to the needs of its Enterprises and Industries, for the employment of its graduate students, and where only the Centers and titles that create employment, social benefit and Science must be enhanced.

A University preocupied to "update" its old graduate students and also preocupied for the permanent training.

A University that signs hundreds or thousands of R & D Agreements with enterprises, gaining with it the consideration and estimate of the Society.

A concurrent university, that alone or together with the industries of its countries, attend all those Projects that may offer the European Community or another international agreements.

These are few ideas of a model of University for these modern days that I believe agree with many students and businessmen ideas.

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